

## PhD Opportunity in 5G-Car

University of the West of Scotland (UWS), Glasgow, Scotland, United Kingdom

The Fifth-Generation (5G) mobile networks are emerging worldwide and pilot 5G systems have recently been deployed. A top 5G use case is 5G connected cars for smart/smarter cities in the 5G era to help achieve the 5G vision of a fully connected community. The focus of this 5G-Car project is to research, develop, prototype and test a set of key enabling technologies to meet the high and intelligent communication and driving experience requirements for next-generation smart vehicles, by leveraging and improving the networking and processing capabilities provided by 5G. In particular, the project may focus on one of the following goals:

- Improved quality of driving experience for drivers or improved road safety for autonomous or semi-autonomous cars, e.g., by employing artificial intelligence/machine learning technologies and interactions with the roadside units and other infrastructure such as Internet of Things (IoT).
- Improved quality of visual experience for onboard ultra-high-definition video streaming services or improved overall communication experience for mission-critical services such as eHealth/mHealth, e.g., by optimising enhanced mobile broadband (eMBB) communication, and/or exploring the latest video signal processing/transmission schemes.

This 5G-Car PhD programme is aligned with a major, 8-million-euro European 5G project SliceNet (<https://slicenet.eu/>), technically coordinated by Prof. Jose M. Alcaraz Calero and Prof. Qi Wang at UWS, who will also be the lead supervisors of this PhD programme, together with supervision from University of Murcia. Through this and other related projects, a realistic 5G infrastructure has been established in UWS, and this is being extended to support the field trials for this project. A new, programmable car is available to allow the prototyping and testing of the new technologies to be developed in this project.

The PhD student will join the team of experienced researchers at UWS and have the opportunity to collaborate with external stakeholders including European 5G industry or research partners such as those in the SliceNet Consortium. Applicants should hold a minimum 2:1 degree or a master's degree in computer science or other relevant disciplines (e.g., applied maths), or have equivalent industry experiences. It is essential that the applicant has good skills in computer programming and good knowledge in one or more of the following areas: computer networks, video signal processing or transmission, artificial intelligence, machine learning, software engineering, mathematical modelling, and/or telecommunications.

We offer a 3-year full-time studentship where both, tuition fees (4560 EUR-worth per year) and stipend (1311 EUR approx. per month) are fully funded by University of the West of Scotland. The estimated starting date is November 2019 but the position is flexible to this respect.

Informal enquiries may be addressed to either

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